SPY RF® WIRELESS SYSTEMS

MONITORING AND DATA STORAGE

JRI

Monitoring is our priority

JRI Maxant has developed a wireless monitoring system which is adaptable and user friendly. Its aim is to maximise security and save time. This global monitoring system SPY RF ® meets perfectly the requirements of current regulations (HACCP, COFRAC and EU equivalents, ISO, GLP, GMP...) and quality control program.

Today, JRI Maxant provides all the components of an efficient monitoring system : on site radio communication survey, metrology, radio communication, hot line, software and maintenance contracts. Easy to use and delivering reliable results, the SPY RF® system also offers automatic surveillance of your laboratory or production plant.

Some of our french users...

St André Les Lille Central Kitchen

Application : monitoring of temperature in cold rooms, freezers and of ambient conditions.

Total Argedis

Application : surveillance of chilled cabinets, cold rooms and ice boxes in gas station.

FOOD

Kitchen

- **› St André Les Lille Central kitchen**
- › St Malo Police school
- › Louvres Hotels (Le Ritz, Ambassador,
- › Hôtel du Louvre, Concorde Montparnasse,
- › Concorde St Lazare, Lutetia, Concorde Lafayette)
- › Charles Perrens Hospital
- › Crous of Rennes (Student service)
- › Mc Donalds
- › Total service stations
- › HRC Restaurant " l'Arche " (Elior Group)
- › Européenne de confiserie
- › Gelati Royal (Italy)
- › Gialdini & Picchi (Italy)
- › Italiascar (Spain)
- › Rayner Marchetti, Caterer

Supermarkets/dealers

- **› Total Argedis**
- › Locaservice
- › Leclerc Supermarkets

Industry

- **› Delpierre Mer et Tradition**
- › Milhaud Salting
- › Berthillon Ice Cream
- › Condat Paper mill
- › CBV delicatessen
- › CocaCola (Italy)
- › Nestlé (Middle East)
- › ...

Delpierre Mer et Tradition

Application : temperature and humidity monitoring in production areas.

Museum of Vire

Application : temperature and humidity record for preservation of artwork.

MUSEUMS / ARCHIVES

- › Galleria Degli Uffizi (Italy)
- › Carnavalet Museum of Nice
- › Paris National School of Beaux-Arts
- › Marc Chagall national Museum
- **› Museum of Vire**
- › Fernand Léger Museum
- › Perfume museum in Grasse
- › Archaeological Museum (Belgium)

...and hundreds of working SPY RF® systems all over the world.
Ask us for your local distributor details.

TINUOUS QUALITY CONTROL

›MEASURES
›RECORDS
›COMMUNICATES
›STORES
›WARNS
(REAL TIME ALARM)

HEALTH

Blood Transfusion Centers and Blood Banks
› EFS P.A.C.A.
› EFS NORMANDIE
› EFS Pyrénées Méditerranée
› Blood Bank of Aragon (Spain)
› Blood Bank of Catalonia (Spain)
› Pula Hospital - Blood Bank (Croatia)
› Sarajevo Central Blood Bank (Bosnia)

Public Institutions
› Abu Dhabi Police-Forensic Laboratoty (United Arab Emirates)
› Food laboratory of Zaragaza (Spain)
› IRCCS for Oncology Research (Italy)
› AZ Groeninge (Belgium)
› Boeringer Ingelheim (Portugal)

Hospitals
› CHRU of Lille
› AP-HP (First group of public hospital in Europe)
› CHU of Mulhouse
› CHU of Nîmes
› King Fahad Medical City (Miyadh)
› Public Health Laboratory of Madrid (Spain)
› A2 (Belgium)
› Group of Hospitals in Lyon

Industry
› CENEXI
› Alliance Healthcare
› Pharmalog
› Serolab (Switzerland)
› DMS Farmaceutici Spa (Italy)
› ABBOTT (Spain)
› Aventis Pharma (Germany)
› ...

TRANSPORT UNDER MONITORED TEMPERATURE

› Transports Antoine Group
› Logidis
› Geodis Logistics Ile de France
› Flash Europe
› TSE
› Agility Logistic (United Arab Emirates)

INDUSTRY

› EDF
› Siemens Automotive
› Virbac
› Procter & Gamble (Romania and France)
› Microsoft (Romania)

AP-HP

Application : surveillance of chambers in biology technical platforms.

Alliance Healthcare

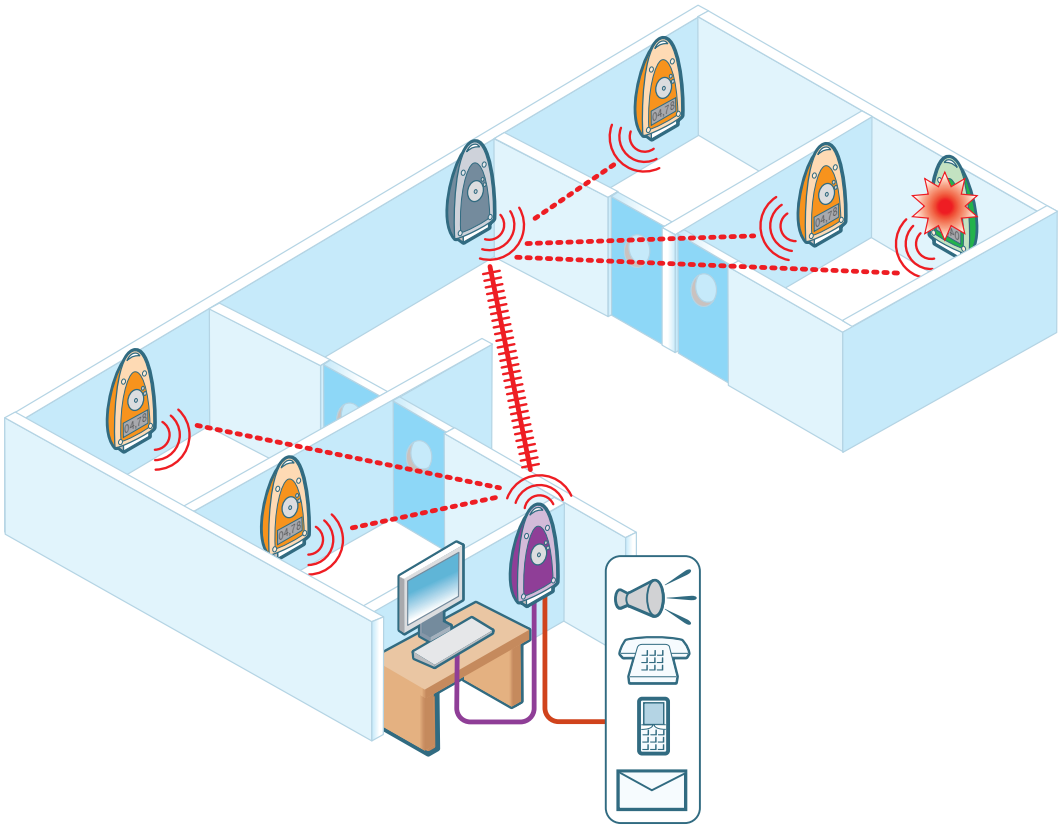
Application : surveillance of temperature sensitive products in storage areas.

Transports Antoine Group

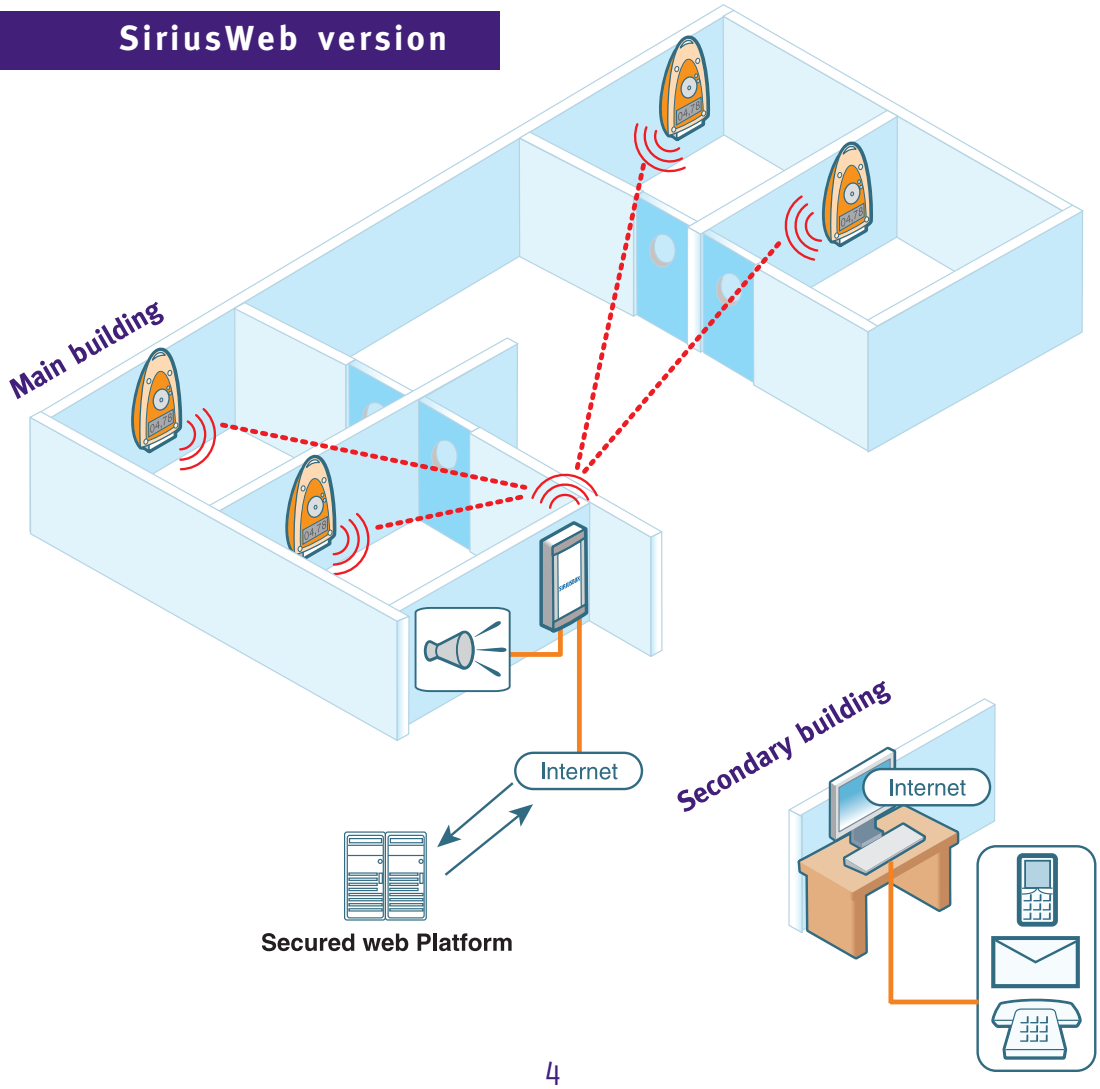
Application : cold chain monitoring during transport.

EXAMPLES OF RUNNING SPY RF®

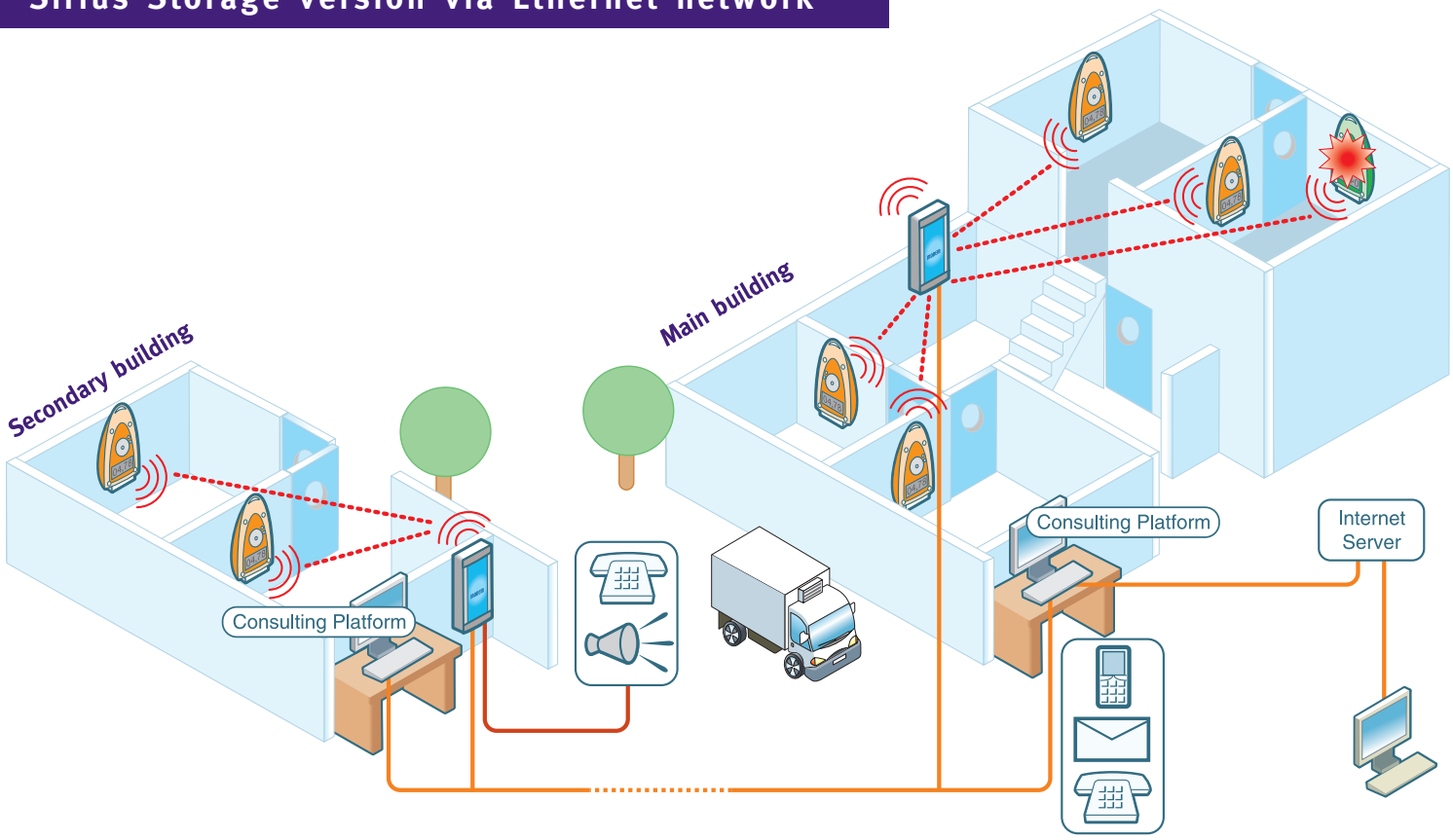
Sirius Lite version with repeater



SiriusWeb version

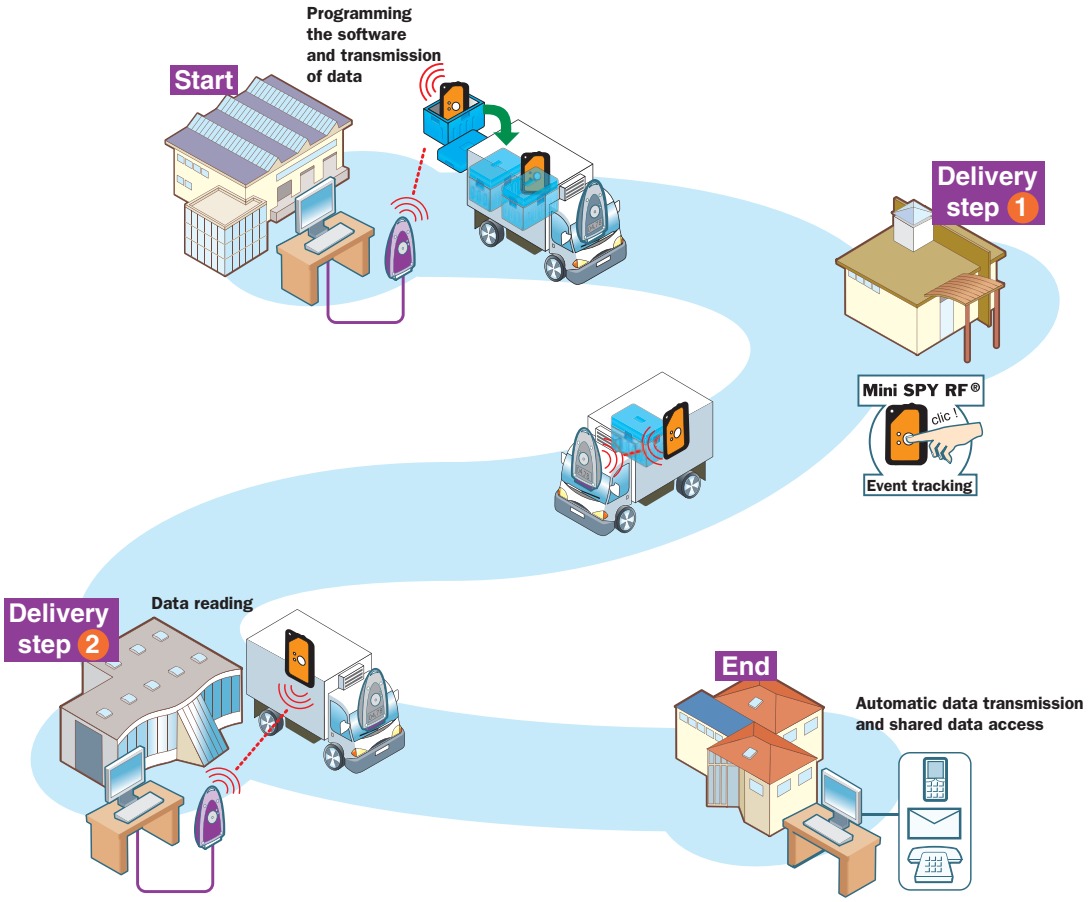


Sirius Storage version via Ethernet network



Sirius Transport version with Mini SPY RF®

Possible version with other recorders of the range SPY RF®



LEGEND

- SPY RF®
- SPY RF® RelaY
- SPY RF® Visu
- SPY RF® ModeM
- SPY RF® AlarM
- SPY RF® Ethernet Modem
- Mini SPY RF®
- SiriusBox
- Ethernet Network
- USB Cable
- Radio communication (200 - 300 m)
- Radio communication (800 - 1000 m)
- SMS / MMS alert
- E-mail Alert
- Visual and Audible Alert
- Telephone Alert

SPY RF® range is also available in °F

Ref. 868 Mhz : 06165
Ref. 902 Mhz : 09570

SPY RF® T

Ambient temperature recorder

Key features

- High color for easy location.
- Economic.
- Splashproof and contaminationproof.

TECHNICAL FEATURES	
Measurement range	From -40°C to + 85°C
Channel number	1
Measurement accuracy at 23°C	±0,4°C from -20°C to +30°C ±0,5°C out of the range
Resolution	0,1°C
Operating conditions	From -40°C to +85°C
Power supply	Lithium battery
Battery life*	4 years - Not replaceable
Type of input	Internal (temperature PTC)
Recording interval	1 to 90 minutes
Internal memory	10 000 measurements
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz (ISM: Industrial Scientific Medical)
Power	25 mW
Digital display	No
Dimensions	123X69X30 mm (HxWxD)
Protection index	IP68
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220
Included	User manual

Ref. 868 Mhz : 06166
Ref. 902 Mhz : 09571

SPY RF® T+

Ambient temperature recorder with protruding probe.

Key features

- Has a temperature protruding probe for a faster response time.
- High color for easy location.
- Splashproof and contaminationproof.

TECHNICAL FEATURES	
Measurement range	From -30°C to + 70°C
Channel number	1
Measurement accuracy at 23°C	±0,4°C from -20°C to +30°C ±0,5°C out of the range
Resolution	0,1°C
Operating conditions	From -30°C à +70°C
Power supply	Lithium battery
Battery life*	4 years - Not replaceable
Type of input	Protruding (temperature PTC)
Recording interval	30 seconds to 90 minutes
Internal memory	10 000 measurements
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X30 mm (HxWxD)
Protection index	IP68
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220
Included	User manual

Ref. 868 Mhz : 06167
Ref. 902 Mhz : 09572

SPY RF® TH

Ambient temperature and relative humidity recorder.

Key features

- Fast response time during measurement variations.
- The probe has integrated protection.
- Replaceable battery.

TECHNICAL FEATURES	
Measurement range	from -30°C to + 70°C from 0 to 100% RH non condensing
Channel number	2
Measurement accuracy at 23°C	±0,4°C from -20°C to +30°C and 2% RH from 20% to 80% RH ±0,5°C out of the range and ±3,5% RH from 10 to 20% RH and from 80% to 90% RH
Resolution	0,1°C
Operating conditions	From -30°C to +70°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	Internal (temperature and relative humidity)
Recording interval	1 second to 90 minutes
Internal memory	20 000 measurements (10 000 per channel)
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP34
Conformities	ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket

Did you know ?

JRI Maxant can provide COFRAC calibration certificates for its whole range of recorders.

cofrac
ETALONNAGE TEMPERATURE

* Depending on operating conditions.

Ref. 868 Mhz
U1 without probe : 06168
U2 without probe : 06169
U1 with Pt 100 probe : 09815
U2 with Pt 100 probes : 09816
Ref. 902 Mhz
U1 without probe : 09573
U2 without probe : 09574
U1 with Pt 100 probe : 09817
U2 with Pt 100 probes : 09818

SPY RF® U
Universal recorder.

Key features
- Compatible with most probes and sensors : Pt 100, Pt 1000, 4-20mA, 0-1 V, contact.
- Monitors all types of temperature-controlled equipment (-200°C to +400°C)
- Allows recording to start when specific events occur.
- Possibility to have different types of input in 2-channel model (analogue or electrical).

TECHNICAL FEATURES	
Measurement range	From -200°C to + 400°C / 4-20mA / 0-1V / dry contact
Channel number	1 or 2
Measurement accuracy at 23°C	See accuracy chart (page 11)
Resolution	0,1°C
Operating conditions	From -30°C to +70°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	External (Pt 100/Pt 1000/4-20mA/ 0-20Ma/0-1V/dry contact)
Recording interval	1 second to 90 minutes
Internal memory	10 000 measurements per channel
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP65
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket and cable input protection

The recorder can be coupled with a probe for a better accuracy (Range -50+125°C)

Ref. 868 Mhz
N1 : 06428
N2 : 06429
Ref. 902 Mhz
N1 : 09578
N2 : 09579

SPY RF® N
Digital recorder (T° / RH / contact).

Key features
- Probes are interchangeable for easy maintenance.
- Suitable for dry contact inputs.
- Allows recording to start when a specific event occurs.
- Possibility to have different types of inputs on the 2 channels model (digital or electrical).

TECHNICAL FEATURES	
Measurement range	T probe : from -40°C to +80°C and TH probe : from -30°C to +70°C from 0 to 100% RH non condensing
Channel number	1 or 2
Measurement accuracy at 23°C	T : ±0,3°C from -20 to +30°C and ±0,5°C out of the range RH : ±2% RH from 0 to 90% RH and ±3% from 90 to 100% RH (with probe)
Resolution	0,1°C
Operating conditions	From -30°C to +70°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	External (temperature, relative humidity and dry contact)
Recording interval	1 second to 90 minutes
Internal memory	10 000 measurements per channel
Radio range	1 Km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP65
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket and cable input protection

Ref. 868 Mhz
U1 : 08634
U2 : 08635
N1 : 08636
N2 : 08637

SPY RF® Santé
Dedicated range for pharmacy and medical biology developed in collaboration with the experts of Paris Hospitals Trust (" AP-HP ", 28 sites) based on SPY RF® U or N.

Key features
- Possibility to monitor the hottest and coldest spots of your chamber (using the 2-channels SPY RF® Santé recorder)
- High accuracy in the range +2 to +8°C.
- Supplied with COFRAC* calibration certificates (*: equivalent to EU standards).

ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

TECHNICAL FEATURES		
Measurement range	SPY RF® Health N T : from -40°C to +80°C	SPY RF® Health U T : from -50°C to +180°C
Measurement accuracy	± 0,3°C with probe from -20°C to +30°C and ± 0.5°C out of the range	± 0,2°C with probe from -20 to +50°C
Channel number	1 or 2	
Resolution	0,1°C	
Operating conditions	From -30°C to +70°C	
Power supply	Lithium battery	
Battery life*	2 years - replaceable	
Type of input	External (temperature, relative humidity and dry contact)	
Recording interval	1 second to 90 minutes	
Internal memory	10 000 measurements per channel	
Radio range	1km line of sight	
Radio band	868 Mhz ISM (Industrial Scientific Medical)	
Power	25 mW	
Digital display	Yes	
Dimensions	123X69X35 mm (HxWxD)	
Protection index	IP65	
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220	
Included	User manual, wall-mounting bracket, cable input protection, 3 points COFRAC calibration certificate (-18, +2, +8°C), temperature probe supplied with 3m cable	

Ref. 868 Mhz
TC1 : 06170
TC2 : 06171
Ref. 902 Mhz
TC1 : 09575
TC2 : 09576

SPY RF® TC

Temperature recorder for Thermocouple K probes.

Key features

- Compatible with all types of thermocouple K probes.
- Compatible with Hygitherm probe, specially designed for pipes.

TECHNICAL FEATURES	
Measurement range	Depending on the probe from -100°C to +1000°C
Channel number	1 or 2
Measurement accuracy at 23°C	±1°C or 0.5% of measured value (without probe)
Resolution	0,1°C
Operating conditions	From -30°C to +70°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	External (thermocouple K)
Recording interval	1 second to 90 minutes
Internal memory	10 000 measurements per channel
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP65
Conformities	ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket and cable input protection

Ref. 868 Mhz
C1 : 06426
C2 : 06427

SPY RF® C

Recorder for countable events.

Key features

- Compatible with most pulse sensors.

TECHNICAL FEATURES	
Measurement range	From 0 to 200Hz
Channel number	1 or 2
Measurement accuracy at 23°C	-
Resolution	1
Operating conditions	From -30°C to +70°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	External (pulses)
Recording interval	1 second to 90 minutes
Internal memory	10 000 measurements per channel
Radio range	1km line of sight
Radio band	868 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP65
Conformities	ROHS, CE, ETS 300-220
Included	User manual, wall-mounting bracket and cable input protection

PRODUCT UPDATE

SPY RF® ReferencE

High accuracy.

Key features

- Resolution of 0,01°C.
- Available in 1 or 2 channel(s).
- Available with or without probe.
- With an accuracy of ±0.09°C this is the tool for metrology operations or incubators surveillance.

Ref. 868 Mhz
1 channel without probe : 09883
1 channel with Pt 100 probe : 09509
2 channels without probe : 09887
2 channels with Pt 100 probes : 09889
Ref. 902 Mhz
1 channel without probe : 09884
1 channel with Pt 100 probe : 09582
2 channels without probe : 09888
2 channels with Pt 100 probes : 09890

TECHNICAL FEATURES	
Measurement range	-50°C to +125°C or -200 to +300°C
Channel number	1 or 2
Measurement accuracy at 23°C	See accuracy chart (page 11)
Operating conditions	From -30°C to +70°C
Resolution	0,01°C
Power supply	Lithium battery
Battery life*	2 years - replaceable
Type of input	External (PT100)
Recording interval	2 seconds to 90 minutes
Internal memory	10 000 measurements per channel
Radio range	1km line of sight
Radio band	868 Mhz or 902 Mhz ISM (Industrial Scientific Medical)
Power	25 mW
Digital display	Yes
Dimensions	123X69X35 mm (HxWxD)
Protection index	IP65
Conformities	ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket, cable input protection and Pt 100 probe

* Depending on operating conditions.

Ref. 868 Mhz
09690 (x1)
09814 (x10)
Ref. 902Mhz on request

Mini SPY RF® Black

Recorder of temperature especially adapted for transport applications.

Key features

- Storing of additional data relative to a specific transport.
- Resistant to vibrations and unbreakable.
- Splashproof and washable
- Remote programming and data reading.
- Protruding probe for a short response time.

TECHNICAL FEATURES	
Measurement range	From -40°C to + 85°C
Measurement accuracy at 23°C	±0,4°C from -20 to +30°C and ±0,5°C out of the range
Operating conditions	From -40°C to +85°C
Resolution	0,1°C
Power supply	Lithium battery
Battery life	4 years
Recording interval	1 to 90 minutes
Internal memory	10 000 measurements + 1 ko memory
Radio range	45M
Radio band	868 Mhz ISM (Industrial Scientific Medical)
Dimensions	80x55x18 mm (HxWxD)
Weight	108 grs
Power	25 mW
Protection index	IP68
Conformities	ROHS, CE, ETS 300-220, EN 12830 norm
Included	User manual, battery

Did you know ?

With Mini SPY RF® measurements temperature as well as products identification data and transport data are stored in a single file.

References
SPY ToucH'® U without probe : 09961
SPY ToucH'® U with probe : 09962

SPY ToucH'®

1 and 2 channels recorder communicating with a USB Key.

Key features

- Multicolour and backlighted touch sensitive screen.
- Programming and consulting directly on the touch sensitive screen.
- Download of data with USB key.
- 40000 measurements per channel.
- Compliant with Sirius Lite 2.0 and Sirius storage 2.0 software (second semester 2010).

TECHNICAL FEATURES			
Designation	SPY ToucH' U without probe	SPY ToucH' U with probe	SPY ToucH' N
Measurement range	From -55°C to +125°C	From -50°C to +125°C	T : from -40°C to +80°C and TH : from -40°C to +80°C and 0 to 100% RH without condensation
Measurement accuracy	±0,3°C on the range (+MPE of probe)	±0,3°C on the range and ±0,5°C out of the range	T :±0,3°C from -20 to +30°C and ±0,5°C out of the range RH : ±2% RH from 0 to 90% RH and ±3% from 90 to 100% RH (with probe)
Operating conditions	From 0°C to +50°C		
Resolution	0.1°C		
Type of input	Pt 100 and dry contact	Coupled and pre configured Pt 100 (flat cable) and dry contact	2 digital channels (T, RH, Dry contact)
Type of output	1 dry contact		
Power supply	220 - 250 VAC		
Autonomy	Backup battery (6 hours)		
Recording interval	10 s to 120 mn		
Memory	40 000 measurements per channel		
Alarm	Visual, audible and relay		
Dimensions	161x84x60 mm (HxWxD)		
Weight	480 grs		
Protection index	IP54		
Conformities	EN 12830 norm, CE, ROHS		
Included	User manual		
Availability	May		July

Several screen colours for a clear display of the status.

Normal status | Inhibited alarm | Alarm | Technical alarm

Temperature mapping and validation of temperature controlled chambers

Compliant with the NFX 15-140 norm.

TECHNICAL FEATURES				
Kit	9 points ‹2 m³ (SPY RF® U)	15 points ›2 m³ (SPY RF® U)	9 points ‹2 m³ (SPY RF® ReferencE)	15 points ›2 m³ (SPY RF® ReferencE)
Measurement range	From -200°C to +260°C			
Kit	1 transportable case, 1 SPY RF® USB ModeM, Metrolog temperature mapping software			
Kit specifications	- 5 SPY RF® U2. - Pt 100 9 probes, Ø2.9 x 20 mm with a 6 m cable. - Pt 100 1 probe, Ø2.9 x 20 mm with a 20 cm cable.	- 16 SPY RF® U1. - Pt 100 16 probes, Ø2.9 x 20 mm with a 20 cm cable.	- 5 SPY RF® ReferencE 2V. - Pt 100 9 probes, Ø2.9 x 20 mm with a 6 m cable. - Pt 100 1 probe, Ø2.9 x 20 mm with a 20 cm cable	- 16 SPY RF® ReferencE 1V. - Pt 100 16 probes, Ø2.9 x 20 mm with a 20 cm cable.
Measurement accuracy	±0,2°C from -20°C to +50°C		±0,09°C from -20°C to +50°C	
Options	Ultra compact PC "netbook" type, calibration certificate			
References	09881	09882	09898	09899

ACCURACY CHART

	DESIGNATION	REF 868 Mhz	REF 902 Mhz	OPERATING RANGE	MEASURING RANGE	ACCURACY	TEMPERATURE VALUES USED FOR A STANDARD CALIBRATION CERTIFICATE	TEMPERATURE VALUES USED FOR A GAUGING CERTIFICATE
SPY RF®	SPY RF® T	06165	09570	-40 to +85°C	-40 to +85°C	±0,4°C from -20 to +30°C ±0,5°C out of this range	-18°C, +6°C, +22°C	-20°C, 0°C, +40°C
	SPY RF® T+	06166	09571	-30 to +70°C	-30 to +70°C	±0,4°C from -20 to +30°C ±0,5°C out of this range	-18°C, +6°C, +22°C	-20°C, 0°C, +40°C
	MINI SPY RF® BLACK	09690 (x1) 09814 (x10)		-40 to +85°C	-40 to +85°C	±0,4°C from -20 to +30°C ±0,5°C out of this range	-18°C, +6°C, +22°C	-20°C, 0°C, +40°C
	SPY RF® TH	06167	09572	-30 to +70°C	-30 to +70°C 0 to 100% HR	±0,4°C from -20 to +30°C and ±2%HR from 20 to 80%HR ±0,5°C out of this range and ±3,5%HR from 10 to 20%HR and from 80 to 90%HR	T°:-20°C, 0, +30°C HR : 20%, 50%, 80% to 23°C	T° : -20°C, 0°C, +30°C HR : 20%, 50%, 80% to 23°C
	SPY RF® U1/U2 with Pt 100 probe	09815 (1 Ch) 09816 (2 Ch)	09817 (1 Ch) 09818 (2 Ch)	-30 to +70°C	-50 to +125°C	±0,2°C from -20 to +50°C ±0,5°C out of this range	-18°C, +6°C, +45°C	-20°C, 0°C, +20°C, +50°C
	SPY RF® U1/U2 without probe	06168 (1 Ch) 06169 (2 Ch)	09573 (1 Ch) 09574 (2 Ch)	-30 to +70°C	-200 to +400°C	±0,3°C on this range (+ probe's MPE*)	NC	-42°C, +69°C, +117°C
	SPY RF® ReferencE with Pt 100 probe	09509 (1 Ch) 09889 (2 Ch)	09582 (1 Ch) 09890 (2 Ch)	-30 to +70°C	-50 to +125°C	±0,09°C from -20 to +50°C ±0,2°C from -50 to -20°C ±0,12°C from +50 to +125°C	-18°C, +8°C, +45°C	-20°C, 0°C, +10°C, +20°C, +40°C, +60°C
	SPY RF® ReferencE without probe	09883 (1 Ch) 09887 (2 Ch)	09884 (1 Ch) 09888 (2 Ch)	-30 to +70°C	-200 to +300°C	±0,05°C from -50 to +50°C (+ probe's MPE*) ±0,1°C out of this range (+ probe's MPE*)	NC	10 points on the whole range
	SPY RF® TC	06170 (1 Ch) 06171 (2 Ch)	09575 (1 Ch) 09576 (2 Ch)	-30 to +70°C	-100 to +1000°C	± 1°C (+ probe's MPE*) or 0,5% of measured value	NC	6 points on the whole range

	DESIGNATION	REFERENCE		OPERATING RANGE	MEASURING RANGE	ACCURACY	TEMPERATURE VALUES USED FOR A STANDARD CALIBRATION CERTIFICATE	TEMPERATURE VALUES USED FOR A GAUGING CERTIFICATE
SPY TouchT	SPY TouchT® U without probe	09961		0 to 50°C	-55 to +125°C	±0,3°C from -20 to +30°C (+ probe's MPE*)	NC	-42°C, +69°C, +117°C
	SPY TouchT® U with probe	09962		0 to 50°C	-50 to +125°C	±0,3°C from -20 to +50°C ±0,5°C out of this range	-18°C, +6°C, +45°C	-20°C, 0°C, +20°C, +50°C
DIGITALS PROBES	Digital T probe : SPY RF® N and SPY TouchT® N	06556	08872	-40 to +80°C	-40 to +80°C	±0,3°C from -20 to +30°C ±0,5°C out of this range	-18°C, +6°C, +22°C	-20°C, 0°C, +15°C, +30°C
	Digital TH Probe	09471	09501	-40 to +80°C	-40 to +80°C and 0 to 100% RH	±0,3°C from -20 to +30°C ±0,5°C out of this range ±2% RH from 0 to 90% RH and ±3% from 90 to 100% RH (with probe)	NC	NC

NC : undisclosed
*MPE : Maximum Permissible Error

RADIO COMMUNICATION DEVICES

Ref. 868 Mhz
USB : 06337
RS232 : 06214
Ref. 902 Mhz
USB : 09584

SPY RF® ModeM

Connects to your PC, enables communication with SPY RF® recorders.

- Communicates with an unlimited number of recorders.
- USB connector.
- Remote alarm driven by integrated dry contact output (vocal telephonic transmitter, buzzer, light).
- Software or PC failure alarm.
- Can be used with or without SPY RF® RelaY.
- Supplied with a wall-mounting bracket.
- Operating conditions from 0°C to +70°C.

Ref. 868 Mhz
VDC : 08913
POE : 08917
Ref. 902 Mhz
VDC : 09586

ModeM Ethernet POE / VDC*

Enables Ethernet connection to maximise distances between recorders and PC server.

- Operating conditions from 0°C to +40°C.

* POE : Power Over Ethernet
VDC : Main power supply required (9VDC)

Reference 08870

SiriusBox

Data transfer box to the Internet platform SiriusWeb.

Ref. 868 Mhz
06215
Ref. 902 Mhz
09583

SPY RF® RelaY

Enables direct RF communication to maximise distances between recorders and PC server.

- Can relay one or more SPY RF®.
- Works with external power supply and supplied with a rechargeable battery.
- Include two power ranges : 25 mW to communicate with recorders and 500 mW to communicate with ModeM.
- Supplied with a wall-mounting bracket.
- Operating conditions from -10°C to +70°C

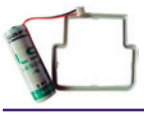
ACCESSORIES

Rubber protector
Reference 06220

Spacer Bracket
To remove the device from the wall and enhance communication.
Reference 06220

IP68 hinge box for SPY RF® (can be open)
Reference 09937

Wall mounting bracket (x5)
Reference 06222



Replacement battery pack (batteries + seals) x 10
Reference 06569

Outdoor shelter for SPY RF® TH
Reference 09643

ALARM DEVICES

Ref. 868 Mhz
06216
Ref. 902 Mhz
09577

SPY RF® AlarM

Real time warning if a problem occurs.

- Local warning.
- Integrated sound and visual alarm.
- Works with an external power supply and supplied with a backup battery.
- Pushbutton for local alarm acknowledgement.
- Relay output to trigger remote alarm (vocal telephonic transmitter ...)
- Warns SIRIUS software when the battery is low.
- Supplied with a wall-mounting bracket.
- Operating conditions from -10°C to +70°C.

Reference 06570

Audible and visual alarm device

- Warns if a problem occurs.
- Works with an external power supply.
- Connects directly to SPY RF® ModeM or to SPY RF® AlarM.
- Audible and visual Alarm.

Reference 03833

Vocal Telephonic Transmitter (VTT)

The vocal telephonic transmitter is an ideal component for any alarm installation. In vocal mode it will call from 1 to 4 phone numbers and inform them clearly on the nature of the incident. Thanks to its vocal help, the VTT is easy to use.

- Need a digital telephone line.
- Customization of identification, alarms and acknowledgement of alarms.
- Need external power (ref. 04729).

Reference 00998

GSM/GPRS ModeM

The GSM ModeM is used with SIRIUS softwares, (V.2.0 minimum) and enables SMS and MMS messages.

Ref. 868 Mhz
08856
Ref. 902 Mhz
09581

SPY RF® Visu (Sirius Transport)

Visualisation of measurements and alarms, (can be used only with SIRIUS Transport)

- Real time warning if a problem occurs.
- Works with an external power supply and supplied with backup battery.
- Sound and visual alarm.
- Rolling measurement display.
- Can manage up to 20 measuring channels.

Did you know ?

JRI Maxant has developed a device to enable on-site radio communication survey, the SPY RF® TesT.

PROBES AND SENSORS

Technological features of probes

JRI Maxant Metrology department recommends the use of two types of probes in order to ensure accurate measurements. The Pt 100 probe is approved as the industrial standard and is available in a large range of accuracy class (B, A, 1/3 Din, 1/10 Din).
The digital probe stores its gauging coefficient. It enables to interchange it without any on-site gauging or calibration constraint. Indeed digital probes are gauged in optimal conditions within our laboratory.
All our probes are equipped with binder connector to be connected to the SPY RF® Recorders.

Pt 100 probes moulded flat cable

Reference 09520	CL.B (± 0,15°C to 0°C), 3 m cable, 3 wires, ø5x20 mm (-50+125°c).

Pt 100 probes

Reference 08513	Stainless steel CL.B (± 0,30°C to 0°C), 3 wires, ø5x40 mm, 5 cm silicone cable (-50+180°c).
Reference 08512	Stainless steel CL.B (± 0,30°C to 0°C), 3 wires, ø5x40 mm, 15 cm silicone cable (-50+180°c).

Pt 100 piercing probe

Reference 00967	CL.B (± 0,30°C to 0°C), 3 wires, 5 m silicone cable, case ø4x150 mm, moulded handle ø9x100 mm (-50 to +250 °c) food application.

PT 100 probe (-80°C)

Reference 00968	Stainless steel ø3x20 mm, CL.B (± 0,30°C to 0°C), 3 wires, 6 m teflon/teflon cable (-200+260°c).

Pt 100 cryogenic probe

Reference 06621	CL.B (± 0,30°C to 0°C), 3 wires, ø3x18 mm, 2 m teflon/teflon cable (-250+150°c).

Pt 100 high temperature probe

Reference 08891	CL.B stainless steel ø6X50 mm, 3m cable, 3 wires, interwoven stainless steel & fibreglass (0+400°c).

Pt 100 1/3 DIN probe

Reference 08511	(± 0,1°C to 0°C), 3 wires, ø3x50 mm, 3 m cable (-90 +250°C).

Screw-in Pt 100 probe

Reference 09928	CL.B 3 m cable, 3 wires, can be unplugged.

For SPY RF® U

Digital probes

Reference 06556	Stainless steel ø7,5x36mm (-40+80°c) 3 m flat cable.
Reference 08872	Stainless steel ø7,5x36mm (-40+80°c) 50 cm flat cable with IP67connector. Extension lead to be ordered separately (see page 15).

TH digital probes

Reference 09471	(-40+80°c / 0-100% RH*) extension lead available (see page 15).
Reference 09501	With protecting coating** (-40+80°c / 0-100% RH*) extension lead available (see page.15).

For SPY RF® N

* Non condensing.
** Saline or corrosive environment.

TH Transmitter
Reference 05886 Wall mounting 2x4-20 mA (0 +50°C/0-100% RH*).
Power supply and universal adapter to be ordered separately

RH Transmitter
Reference 05887 Wall a mounting 4-20mA (0-100% RH*).
Power supply and universal adapter to be ordered separately

CO2 Transmitter
Reference 08991 (0 to 20%), ± 0.3 + 2% of the reading.
Supplied with 1 power supply and a 2 m cable for SPY RF® U.

For SPY RF® U

Mounting bracket for CO2 Transmitter
Reference 08337

ΔP Transmitter
Reference 08371 Measurement range from 0 to ± 100 Pa, ABS shell, IP65, 2 visual and sound alarms, requires power of 230 V, and 2 inputs (4-20 mA or 0-10 V), universal adapter to be ordered seperatly.

TCK probe
Reference 08537 ø6x400 mm (-200 +1100°c), inconel duct, insulated soldering.

For SPY RF® TC

Power Supply Failure Detector (DCS)
Reference 08784 Alerts to mains power supply failure. This sensor links the mains power supply to the SPY RF® recorder.
When a power supply failure occurs, the DCS sends the information to SIRIUS software which triggers an alarm.

For SPY RF® U or N

PROBES ACCESSORIES

3 m extension lead
Reference 08873 For digital T probe with IP67 connector for SPY RF® N.

Reference 06564 For digital TH probe with IP67 connector for SPY RF® TH.

12 m extension lead
Reference 08874 For digital T probe with IP67 connector for SPY RF® N.

Reference 09468 For digital TH probe with IP67 connector for SPY RF® TH.

Universal adaptator
Reference 00949 (5m) with connector IP67 for SPY RF®N or U.

12 VDC power supply / 500 mA
Reference 04729 For transmitters, up to 4 transmitters 4/20 mA or 1 Vocal Telephone Transmitter.

24 VDC power supply / 400 mA
Reference 04732 For transmitters, up to 16 transmitters 4/20 mA.

Sirius Stockage

Software dedicated to monitoring of a fixed installation.

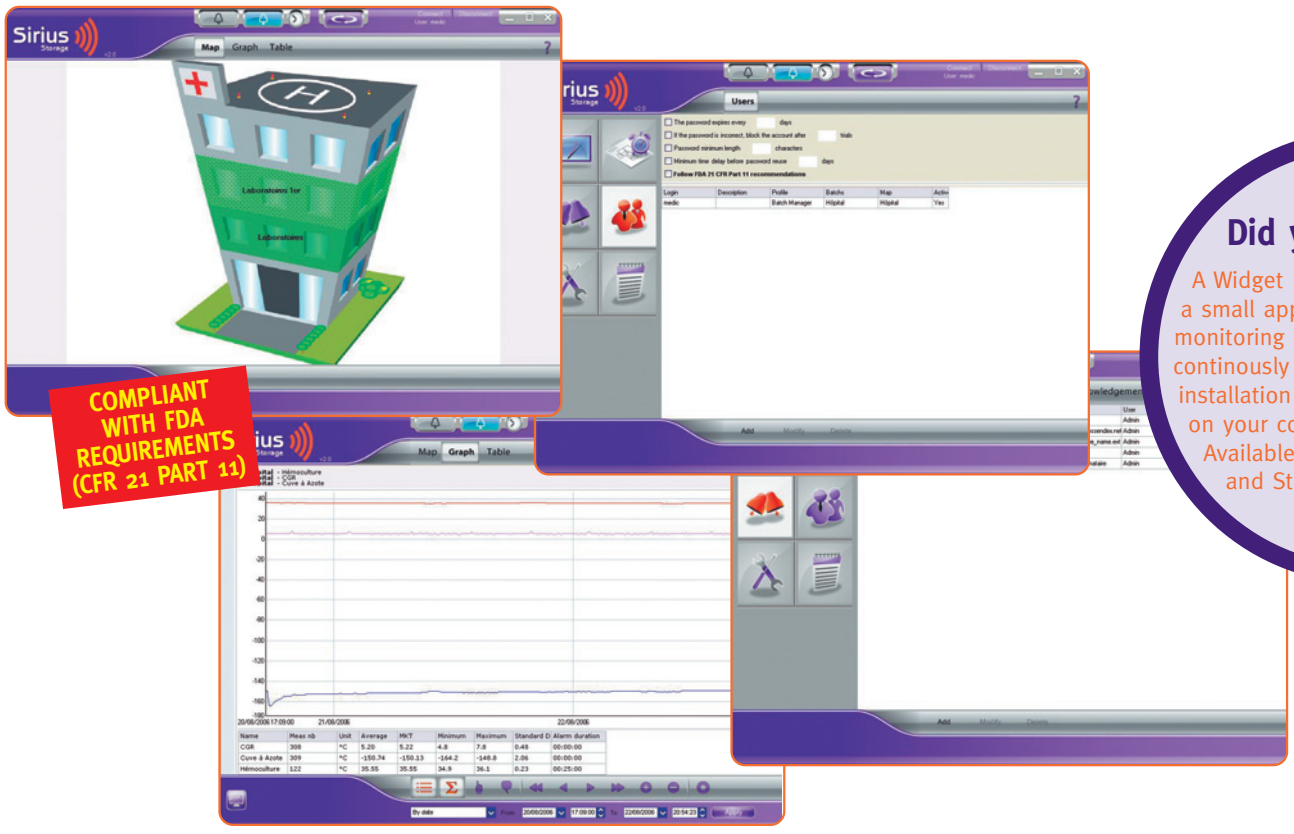
NEW 2.0 VERSION

The new 2.0 version allows you to :

- Manage 4 levels of responsibility: administrator, user, batch manager and metrologist.
- Consult alarms and graphics from any PC of the network without installing any software.
- Automatically update Client PC.
- Automatically and regularly search for the best radio path in order to guarantee optimal radio communication during or following movements of your temperature controlled chambers.
- Receive the most relevant information in case of alarm by e-mail or MMS (graphics, values, thresholds, monitored units, etc...)
- Replace your equipment more easily thanks to the maintenance function that enables loading of the equipment configuration backup to replacement device.
- Manage your metrology by controlling the measurement quality of recorders, monitoring the calibration periods or other services, judging whether a measurement chain complies or not with your criteria relation to its use.
- Control the quality of stored products with the MKT function (Mean Kinetic Temperature), enabling the level of degradation of thermo sensitive products to be determined.
- Search for links between equipment more easily : display the device's fleet under a tree diagram format (lots, modems, repeaters, SPY RF®).

JRI EXCLUSIVE

The multi-user Sirius Storage version enables the installation of an unlimited number of Client PC.



Did you know ?

A Widget is a small application monitoring continously your installation located as an icon on your computer screen. Available with Sirius Lite and Storage versions.

TIME SAVING - REDUCED COSTS

Sirius Lite

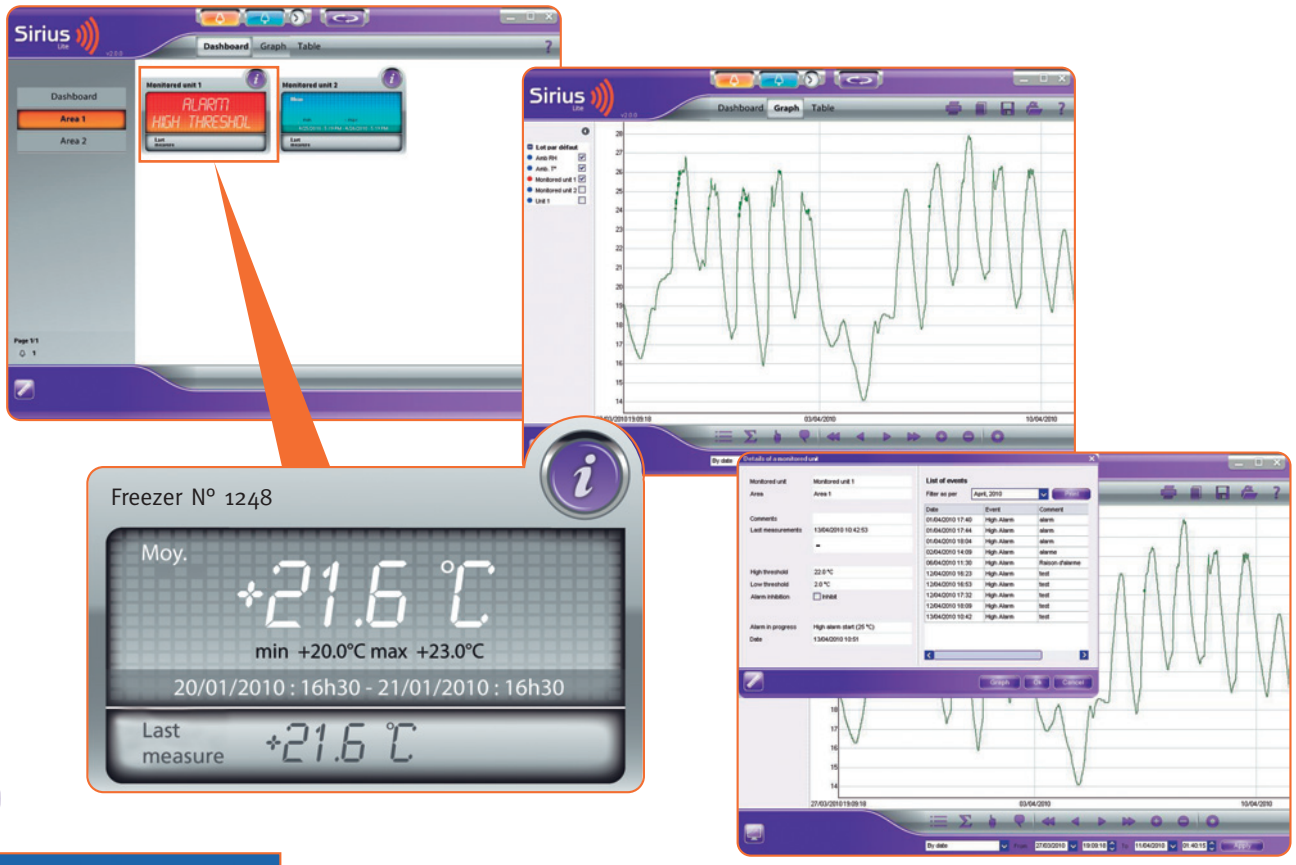
Single user software for a simplified use (one server PC, one SPY RF® ModeM and an unlimited number of SPY RF® recorders).

The new 2.0 version allows you to :

- See all the measurement points at once thanks to the dashboard.
- Receive most relevant information in case of alarm by e-mail or MMS (graphics, values, thresholds, monitored units, etc...).
- Have new alarm servers available : SMS, e-mail, MMS, telephone call, via the internet and without additional equipment.
- Control the quality of stored products with the MKT function (Mean Kinetic Temperature), enabling the level of degradation of thermo sensitive products to be determined.

Did you know ?

You can receive alams by MMS with display of your graphics, thresholds, values...



SIRIUS Transport,
a software designed to monitor all transport steps.

Dual monitoring in the same file : identification of products and recorded temperatures throughout transport.

SIRIUS Transport features :

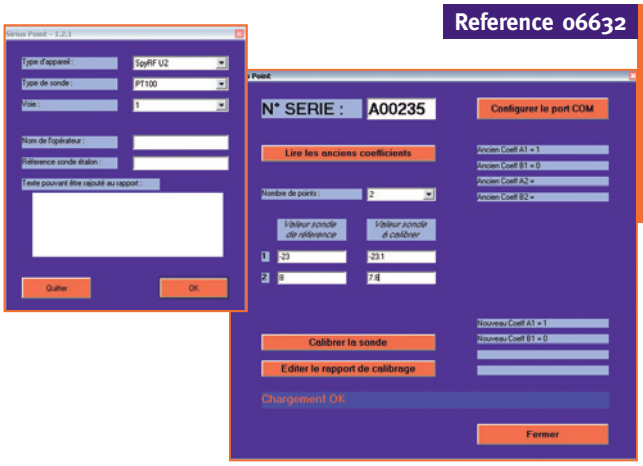
- Enables recovery of SPY RF® information located in a vehicle or a trailer automatically and remotely.
- Enables configuration of a transport sheet (delivery slip, type of transport, address of sender and addressee, vehicle registration, name of driver, addresses of stops, date.)
- Marks delivery stops on the graphics.
- Manages 2 levels of responsibility : administrator and user.
- Controls several SPY RF® ModeMs.
- Displays comments on alarm points.
- Transfers alarms and values to SPY RF® Visu.
- Manages and searches archived transport files.
- Available in mono or multi-user versions.

A TURNKEY SERVICE
SiriusWeb
TO MONITOR YOUR TEMPERATURES VIA INTERNET

Did you know ?

This solution enables you to monitor, via Internet, the temperature of your temperature controlled chambers and react rapidly in case of incident.

Technical features of SIRIUS software	Sirius Lite V2	Sirius Stockage V2	Sirius Transport	Sirius Web
Last measurement reading	Manual	Automatic and manual	√	√
Memory dumping of one or more units	√	√	√	√
Management of several modems		√	√	√
Multi-user management		√	√	√
Dashboard chart with plan		√		
Dashboard chart without plan	√	√	√	√
User and batch management (CFR 21 Part 11)		√	Users	
Alarm inhibition	√	√	√	√
Automatic printing of reports, statistics	√	√	√	
Defrost cycle management		√	√	
List of alarm acknowledgement reasons		√		
Manual input of an alarm reason	√	√	√	
SMS	√	√	√	√
MMS	√	√		√
E-mail	√	√	√	√
Telephone call	√	√	√	√
Other (dry contact)	√	√	√	
Audit trail		√	√	
Automatic search for the best radio path		√		
Monitoring and continuous optimization of radio communications		√		
Display of equipment fleet in tree diagram format		√		
Metrology management		√		
MKT statistical function	√	√		
Maintenance function		√		
Widget	√	√		
Consulting and operation on internet				√
Management of transport sheets			√	
Choice of channels to display	√	√	√	√
Zoom and statistics	√	√	√	√
Event display	√	√	√	
Tiling of graphics	√	√	√	√
Secondary scale	√	√	√	√
Curser display	√	√	√	
Export an image to Word	√	√	√	
Backup an archive	√	√	√	√
Alarm log	√	√	√	√
Export data to Excel	√	√	√	√
Reference	**06450**	**Multi-user : 06448 Mono-user : 06449**	**Multi-user : 06451 Mono-user : 06452**	**Subscription : 09733**



Reference 06632

SIRIUS Point,

enables adjustment operations of SPY RF® recorders (with the exception of SPY RF ® N, SPY RF ® C and SPY RF® ReFerencE. The SIRIUS Point software also automatically sets up the gauging report. Only available in French.

METROLOG CALIBRATION SOFTWARE

NEW SOFTWARE

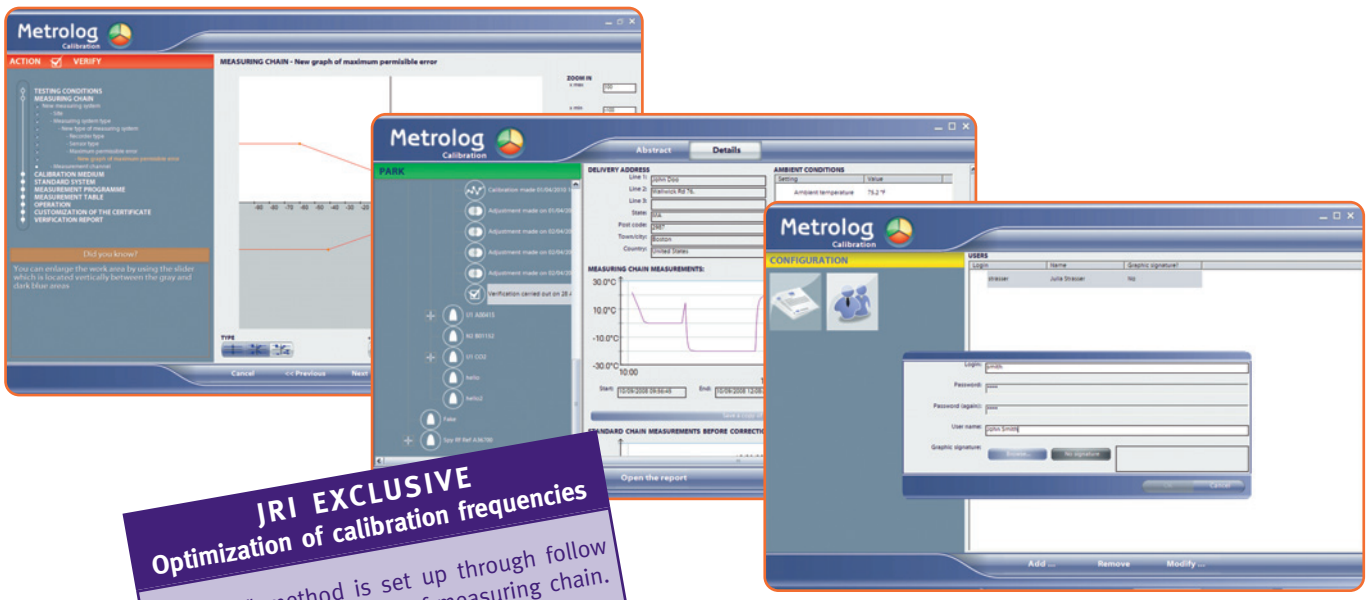
Metrolog Calibration 2.0

Calibration software to proceed to your own metrology operations.

Reference 06450

The new 2.0 version allows you to :

- Adjust, check and calibrate the entire SPY RF® range.
- Manage your measuring chains fleet with historical display of metrology operations.
- Automate your calibrations through automatic detection of stability step.
- Demonstrate the ability to produce calibration services to an auditor.
- Use all types of standard chains.
- Write metrology information in the recorders so that they can be used automatically in Sirius Storage V2.0.
- Comply to standards NFX (Calibration certificate) 07-012 and NFX (checking report) 07-011.
- Take the maximum permissible errors into account in your different measuring chains systems as well as correction of calibration uncertainties of the standard reference.
- Judge the compliance of a measuring chain from its use conditions.
- User friendly software where metrologist is guided step by step.



JRI EXCLUSIVE
Optimization of calibration frequencies

"Opperet" method is set up through follow up deviations over time of measuring chain.

ENGINEERING SERVICES

Calling on numerous years of experience, our technicians take on assignments as diverse as :
- on-site qualification of radio communication,
- installation of probes according to good practice,
- system parameter setting,
- preventive and corrective maintenance,
- on-site metrology,
- training adapted to every level of involvement,
- systems qualification (IQ/OQ).

While proceeding to an installation qualification, we offer on-site installation and set up of your equipment in compliance with manufacturer recommendations (IQ). To confirm the installation qualification operation a test report is issued.
For an operational qualification we assess the compliance of the equipment regarding the technical specifications. This operation is also validated by the issuing of a test report.
The IQ/OQ enables installation and operational qualification procedures to be established.

TECHNICAL SUPPORT

A technicians team is at your disposal for :
- remote maintenance of your SPY RF® system
- technical hotline
- interactive FAQ* accessible from the site www.jri.fr

*FAQ : Frequently Asked Questions

PREVENTIVE AND CORRECTIVE MAINTENANCE CONTRACT WITH GUARANTEE EXTENSION

The SPY RF® system needs to be regularly supervised to optimize its functionalities (measurement accuracy, radio communication quality, software updates, etc...), which is why we offer a global maintenance contract including, in particular :
- Extension of the guarantee on hardware, software and your installation
- Remote maintenance of your application for immediate intervention
- Technical hotline access
- Replacement of failed hardware by standard exchange under certain conditions
- Access to new software versions and additional training
- On-site intervention within 48 working hours if necessary (after dysfunction identification by our experts).

And, optionally :
- Preventive on-site inspection visits
- On-site metrology services (calibration, mapping, adjustment)
- Checking and optimization of radio communications
- Preventive changes of batteries
- Operational qualifications

METROLOGY SERVICES

Laboratory metrology services

It is pointless to be equipped with a traceability and monitoring system if the measurements readouts are not reliable.

Therefore we acquired and improve our skills in quality of measurements within our two metrology laboratories.

- **A COFRAC accredited laboratory** providing temperature calibration certificates in a range from -20°C to +120°C with an uncertainty of ±0.05°C.

The quality of services provided by this laboratory is audited and confirmed every year by an independent organization, COFRAC. This accreditation, for our customers, corresponds to a commitment on the quality of calibration and a guaranteed uncertainty value, but it is also an international recognition of the quality system set up within ISO standarts.

- **A linked to COFRAC laboratory**, which performs measurements over wider ranges from -196°C to +250°C and metrology operations for all brands equipments in temperature, humidity, CO2, pressure, etc...

Thanks to this structure, we can fully satisfy customer demands with ever-increasing requirements in the control of measuring chain uncertainty. Furthermore, our customers, themselves COFRAC accredited according to ISO 17025 and 15189 standards need to be supported by specialists. Using COFRAC accredited laboratories guarantees reliable and objective measurements.

COFRAC certified metrology operations offered in the laboratory :

Ref. 09198	COFRAC temperature calibration (-18°C, +2°C, +8°C)
Ref. 09737	COFRAC temperature calibration (-20°C, 0°C, +40°C)
Ref. 09199	COFRAC temperature calibration (+36°C, +38°C, +45°C)
Ref. 06559	COFRAC temperature calibration certificate (+36°C, +37°C, +38°C)

On request : COFRAC calibration certificate (2 to 5 points) between -20°C and +120°C

Linked to COFRAC metrology operations offered in the laboratory :

Ref. 09841	Temperature calibration (3 standard points according to type of device)
Ref. 09770	Temperature calibration (2 points : -40°C, -80°C)
Ref. 09771	Temperature calibration (2 points : -80°C, -196°C)
Ref. 09772	Temperature calibration (3 points : -18°C, +2°C, +8°C)
Ref. 09773	Temperature calibration (3 points : 36°C, 38°C, 45°C)
Ref. 03727	Relative pressure calibration (3 points within the total measurement range)*
Ref. 09729	Relative humidity calibration (3 points : 20%, 50%,80%RH at 23°C)

On request : Calibration (from 2 to 5 points as required) between -80°C and +250°C
and the point -196°C.

* From 60 mBar to 1000 Bar.

On-site measurement services

We recommend the control of the homogeneity of thermostatically controlled chambers for all thermo sensitive products. In this respect, we employ a team in charge of defining the characteristics of your chambers on your premises, according to NF X 15-140 and CEI 60068-3 standards. Each characterization survey is recorded in a mapping report highlighting the critical points and the compliance of the chambers in relation to predefined requirements.

On-site Metrology operations offered :

Réf. 08396	9 points thermostatic chambers temperatures mapping
Réf. 09741	15 points thermostatic chambers temperatures mapping
Réf. 09854	COFRAC 9 points thermostatic chambers temperatures mapping
Réf. 09855	COFRAC 15 points thermostatic chambers temperatures mapping
Réf. 09921	Temperature calibration certificate on 1 point (use point)
Réf. 09922	Temperature calibration certificate on 3 points
Réf. 09923	Relative humidity calibration certificate on 1 point (use point)
Réf. 09238	CO2 calibration certificate on 1 point (5%)

On request : Characteristics of chambers for temperature and humidity.

TRAINING

We offer you different training schemes such as technical maintenance, installation and set up of systems, wireless system use and administration, and metrology.

Training 1 : The wireless solution

In order to master the wireless solution, we adapt to the profile of each of our customers by offering specific user, maintenance technician, administrator and metrologist training.

Program on request.

Training 2 : First steps in metrology

JRI Maxant delivers metrology training presenting the principles of metrology and training in different calibration and mapping techniques for standard laboratory equipment (incubators, autoclaves, refrigerators, freezers, cold rooms, etc...).

Duration	**2 days**
Location	**Paris region**
Programme	

- **Metrology in the laboratory**
  - Definitions
  - Standards
  - Meeting requirements
- **Characteristics of measurement means**
  - Management of a fleet of devices
  - The calibration chain
  - Procedures and documents
- **Calibration and measurement uncertainty**
  - Definitions
  - Methods
- **Integration of metrology in the qualification process (IQ/OQ/PQ)**
  - Difference between metrology and qualification
  - The role of metrology in qualification
- **Characteristics of a thermostatic chambers**
  - Principles
  - Standards
  - Quality follow up
  - Practical aspects

Did you know ?

The training supplied by JRI Maxant can be integrated into your annual training program.
(Approval No. 11 950 440 095 dated 04/08/2006)

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JRI Maxant
Rue de la Voivre
Parc d'Activités Technoland - BP 51027
25490 FESCHES LE CHATEL CEDEX - FRANCE

Ph. : +33(0)3 81 30 68 04
Fax : +33(0)3 81 30 60 99
www.jri.fr - E-mail : info@jri.fr

JRI Maxant - Siège Social : 116 Quai de Bezons - BP 20085 - 95101 ARGENTEUIL CEDEX - FRANCE
JRI - S.A.S. 4 000 000 € CAPITAL - R.C.S. PONTOISE 380 332 858

Monitoring is our priority